WHAT IS CLAIMED IS:

1. A method of recognizing an object based on pattern matching using a gray-scale normalized correlation method, comprising the steps of:

storing a reference image including a foreground and a background, said foreground and said background each having a predetermined value of density distribution;

inputting an image of the object, said image including a foreground and a background, said foreground and said background each having a predetermined average value of density distribution;

storing a function for giving said predetermined values of density distribution of said reference image equal to said predetermined average values of density distribution of said input image, respectively; and

obtaining a maximum normalized correlation coefficient between said reference image and said input image using said function.

2. The method as claimed in claim 1, wherein said function is such that said reference image is high in said predetermined value of density distribution of said foreground, and low in said predetermined value of density distribution of said background.

3. The method as claimed in claim 1, wherein said function is such that said reference image is low in said predetermined value of density distribution of said foreground, and high in said predetermined value of density distribution of said background.

4. The method as claimed in claim 2, wherein said function is obtained by designating a pattern of said reference image,

overlaying an image of said pattern on said input image, and designating one of a predetermined average value of density distribution of said image and a predetermined value of density of said image.

5. The method as claimed in claim 2, wherein said function is obtained by extracting an outline of the object, overlaying an image of said outline on said input image, and designating one of a predetermined average value of density distribution of said image and a predetermined value of density of said image.

6. The method as claimed in claim 1, wherein said maximum normalized correlation coefficient is obtained from simple summation of a cross-correlation coefficient.

7. A method of recognizing an object based on pattern matching using a gray-scale normalized correlation method, comprising the steps of:

storing a reference image including a foreground, said foreground having a predetermined value of density distribution;

inputting an image of the object, said image including a foreground, said foreground having a predetermined average value of density distribution;

storing a function for giving said predetermined value of density distribution of said reference image equal to said predetermined average value of density distribution of said input image; and

obtaining a maximum normalized correlation coefficient between said reference image and said input image using said function.

8. The method as claimed in claim 7, wherein said function is obtained by designating a pattern of said reference image, overlaying an image of said pattern on said input image, and designating one of a predetermined average value of density distribution of said image and a predetermined value of density of said image.

9. The method as claimed in claim 7, wherein said function is obtained by extracting an outline of the object, overlaying an image of said outline on said input image, and designating one of a predetermined average value of density distribution of said image and a predetermined value of density of said image.

10. The method as claimed in claim 7, wherein said maximum normalized correlation coefficient is calculated in excluding a term of a background of said reference image from an equation of an autocorrelation coefficient of each of said reference image and said input image and an equation of a cross-correlation coefficient between said reference image and said input image.

11. The method as claimed in claim 7, wherein said maximum normalized correlation coefficient is obtained from simple summation of said cross-correlation coefficient.

12. A medium for recording a computer program having a method of recognizing an object based on pattern matching using a gray-scale normalized correlation method, the method comprising the steps of:

storing a reference image including a foreground and a

background, said foreground and said background each having a predetermined value of density distribution;

inputting an image of the object, said image including a foreground and a background, said foreground and said background each having a predetermined average value of density distribution;

storing a function for giving said predetermined values of density distribution of said reference image equal to said predetermined average values of density distribution of said input image, respectively; and

obtaining a maximum normalized correlation coefficient between said reference image and said input image using said function.

13. A medium for recording a computer program having a method of recognizing an object based on pattern matching using a gray-scale normalized correlation method, comprising the steps of:

storing a reference image including a foreground, said foreground having a predetermined value of density distribution;

inputting an image of the object, said image including a foreground, said foreground having a predetermined average value of density distribution;

storing a function for giving said predetermined value of density distribution of said reference image equal to said predetermined average value of density distribution of said input image; and

obtaining a maximum normalized correlation coefficient between said reference image and said input image using said function.